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## RISK APPETITES AND EMPIRICAL SURVIVAL PATTERN OF SMALL AND MEDIUM ENTERPRISES IN NIGERIA

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## **I. Introduction**

The level of industrialization any nation can attain at a particular point in time is hinged on the prevailing entrepreneurial activities in that nation. At the same time, no economy can effectively grow without active roles of SMEs that shape the entrepreneurial activities in the country. Indeed, it has been acknowledged that SMEs are engines to achieving growth objectives of developing countries because they mobilize idle funds, employ and adapt easily to customers' needs (Abotsi, Dake & Agyepong, 2014; and Luper & Kwanum, 2012).

However, significant numbers of SMEs have been reported to fail before attaining fifth year of their incorporation due to lack of funds (Bank of England, 2001; Rogerson, 2005; Skinner, 2005). To understand the pattern of SMEs' survival in Nigeria, there is need to come up with models that explain their growth rate instead of relying on the use of simple percentages.

Previous studies (such as Abotsi et al, 2014; Berger and Udell, 2001; and Reynolds & Lancaster, 2005) have focused on how the physical assets can be protected and prevent the occurrence of business losses to strengthen the survival of SMEs. As at the time of this study, there has not been evidence of any previous study that applied reliability theory to predict the survival pattern of SMEs. At best, previous studies only use mean/standard deviation test to report how SMEs failed owing to financial and other environmental factors.

The present study is concerned with risks which are particular, pure and measurable in financial terms. It focuses on the effectiveness of risk mitigation methods employed by SMEs located in Lagos metropolis and Benin City. The choice of the two cities is due to the fact that the former hosts more local and foreign investors who engage in SMEs than any other part of the country while the latter representing a capital city of Edo State has recently witnessed incessant fire outbreak thereby leading to the early shutdown of the affected SMEs businesses which would have positively contributed to the well-being of the economy. The SMEs selected for this study are registered and have been in operation for at least five years.

The reason for this period is to model the survival patterns of SMEs that have survived the difficult periods of first five years of incorporation. The study does not cover other risks militating against business such as economic, environmental, and political, among others. All these risks are not insurable and can be dealt with by using other risk methodological approaches. The present study particularly focuses on how the general measures put in place to protect physical assets used for business activities influence the survival/failure of SMEs in the areas of study. The specific objectives are to: (1) examine whether business risk financing relate to

SMEs' shutdown in the first 5 years of operation as well as the survival pattern after the early five years of operation, and (2) establish whether risk financing and mitigation approaches have any effect on SMEs risk exposures. The attainment of these objectives will enable the effective modelling of SMEs' survival patterns in the two cities in the selected states.

## **II. Literature Review**

### **A. Conceptual Clarification of risk appetite**

Risk appetite is perceived by many organisations as a fascinating subject leading to theoretical discussions but often failed to embrace it while making their daily decisions (KPMG, 2008). The basis for making important decisions in an organisation therefore depends on its objectives and strategy to achieving goals. SMEs and large enterprises are exposed to many perils that lead to their early shutdown. To avoid business shutdown, the managers of these entities must decide in advance on the scope of operation to pursue their business objectives. This scope of operation defines their risk appetite, although there is no general consensus of what the concept implies. It all depends on the context in which the term is considered, and in some cases, it means how much the organization's drivers intend to relate with a particular organisation while at the same time restricting their relationship with another company of similar line of business. The concept is also defined as total level of risk to be accepted by a financial institution with a view to achieving its strategic objectives (Financial Stability Board, (FSB), 2013).

In corporate context, risk appetite is perceived as the level of risk an organisation can take to achieve strategic objectives (KPMG, 2008). Therefore, risk appetite embraces the totality of organisation strategic decisions or how the manager want their organisations to be viewed by stakeholders such as customers, employees, regulators and other rating agencies (KPMG, 2008). This means that risk appetite is the broad understanding of risk an organisation is willing to accept in order to achieve business goals.

Atkin and Bates (2007) define risk appetite as companies' response to risk or exposure to it. In order to effectively control the risks inherent in business, they noted that there is need for the operators of companies to have a good insight of the entire business, particularly, areas of vulnerability to be avoided. For example, the use of trial and error to finance risk exposure due to absence of knowledge or reliance on public electricity without standby generator or lack of adequate backup of vital information of the business represent risk appetite.

The definition of risk appetite given by Atkin and Bates (2007) perfectly fits the risk SMEs are exposed to and that is the context in which risk appetite is considered for this study. This study does not considered risk appetite as strategic

decisions employed to achieving organisation goals. It only focuses on method used by SMEs when they are faced with business difficulties such as losses or damage to business property to reduce their exposure.

#### B. Risk Classification

Risk management has been developed and adopted by many disciplines. Thus, it can be safely said that every area of business is surrounded with risk, just as human actions with respect to running the business are exposed to risk. Nevertheless, many of these risks can be predicted based on experience (Blanchard & Williams, 1979). Given the range of risks faced by companies and to avoid vocabulary confusion, general consensus has led to categorization of risk into two (Isimoya, 2000; Mowbray, Blanchard & Williams, 1979): (1) static or pure, and dynamic or speculative. The first one, that is, pure risk always have negative impact and fictitious in nature. This type of risk is insurable and does fall under the risk insurance companies are willing to underwrite. The second, speculative, can result to either financial gain or loss or at worse, break even. Thus, Atkins and Bates (2007) and Isimoya (2004) specifically classified risk into the following three groups:

*Financial and non-financial risks* - It has been said already that risk is the absence of knowledge about the outcome of an event. A financial risk is one which the results can be determined monetarily and examples include damage to property such as theft or loss of profit as a result of fire damage to property used for business (Isimoya, 2004). On the other hand, there are other situations which could be perceived as very risky, though not due to the fact that the result will lead to financial loss, but the result could be unfavourable or dislike (Atkins & Bates, 2007). People can easily attribute social decisions in life as examples of non-financial risks: marriage selection or career choices but which cannot be measured in financial terms and such risks are not insurable.

*Pure and speculative risks* - Pure risks result in a loss or better still, no gain and can lead to financial pains or put one in the same financial position earlier enjoyed before the occurrence of risk (Atkins & Bates, 2007; Isimoya, 2004). Examples of pure risks are fire in the building used for business, and theft of business properties including profits or monies. The direct opposite of pure risk, where there is possibility of gain is called speculative risk, and example is through investment in companies by means of shares subscription.

*Fundamental and particular risks* - Fundamental risks are those that arise from causes outside the control of any one individual, or even a group of individuals (Atkins & Bates, 2007; Isimoya, 2004), and the effect is felt by large number of people. Particular risks on the other hand are personal and do not affect the entire population or segment of the population but few people. These types of risks also result in financial pains including theft, fire or motor accident.

### C. Role of SMEs in Economy Development

The role played by SMEs in developing countries is crucial than that of the developed countries (Rwigema & Karungu, 1999). SMEs' owners/managers ability to carefully identify risks attaching to their business is expected to yield reduction in losses, thereby contributing to the economic growth of the nation. The significance of SMEs has been recognized in many African countries like Malawi, Burkina Faso, Nigeria, Cote d'Ivoire, Ghana, Uganda, Togo, as well as others (Smit & Walkins, 2012). Rwingema and Kurungu (1999) observed that SMEs dominate economic activities of many nations.

Indeed, SMEs have been perceived as engine to economic growth and employment generation in countries with high rate of unemployment (Friedrich, 2004; Watson, 2004). For instance, in advanced countries like the United States of America and the United Kingdom, SMEs' activities represent one-third of industrial employment but with a lesser percentage of output (Smit & Walkins, 2012). Rogerson (2000) attests that SMEs' activities in African countries serve as instruments for job creation, promoting economic growth and poverty alleviation.

In agreement to this attestation, Central Bank of Nigeria (CBN) (2011) revealed that SMEs are critical to economic development and have significantly enhanced job creation through entrepreneurship skills development in the country. Despite the role played by SMEs in Africa, Mead and Liedholm (1998) revealed that their survival chance is very low as many of them experience rapid shutdown than expanding the scope of their operations. Business failure is the last stage of an organisation's life cycle and it refers to loss of profit or revenues due to company's failure or inability to operate (Akinola, 2014).

Many scholars in management sciences have revealed that a greater numbers of entrepreneurs who enter into the business world in Nigeria experienced failure than successful due to variety of internal and external factors. Some of the commonly cited among these factors affecting the SMEs' survival include but not limited to: wrong choice of business, competition, lack of market analysis, education and experience, technical changes, deficient entrepreneurial capacity and poor business orientation (Dawber, 2006; James, 2006; Lawal, 1993; Omoniyi, 1994; Obikoya, 1995). In spite of the increasing percentage rates of SMEs' shutdown, they are essential segment of the economy of nations, and they need financial backup to succeed in their operations (Waring & Glendon, 1998).

### D. Empirical Review

A careful assessment of risk militating against the SMEs' survival will reduce the possibility of high failure rates, thereby enhancing the profitability of business ventures. Ariyo (2005) revealed that irrespective of the location of SMEs, be it in advanced countries or in developing ones, they play significant role in

sustaining of economic growth and development. However, SMEs in Nigeria have not been able to perform to expectation in terms of contribution to national development (Iopev & Kwanum, 2012).

Kagwathi, Kamau, Njau and Kamau (2014) revealed that SMEs sector is constraint to play their roles to the fullest due to poor management and related business risk financing. A lack of awareness of risks confronting the SMEs by their operators sometimes leads to situations in which managers direct their attention only on risk control programmes that concerned safety at work and quality assurance on production (Smit & Watkins, 2012). Viridi (2005) revealed that risk management approaches are poorly developed in such a manner whereby the SMEs owners mistakenly go against professional way of risk management structure in their businesses. Mead and Liedholm (1998) reported that chances of SMEs continue in business is narrow in African countries due to inappropriate risk financing (mitigation) approaches employed by their operators.

Consequently, managers that ignore factors that threaten their survival due to poor risk financing is bound to fail. Luper and Kwanum (2012) showed that about 84% of SMEs in Nigeria do not have insurance cover for their businesses against militating.

### III.METHODOLOGY

#### A. Population and sampling technique

The study covers all the SMEs located in Benin City and Lagos metropolis. A convenient sampling method was used to select 209 SMEs' owners/operators through questionnaire administration.

#### B. Model Specification and Hypotheses of the Study

In this section, the researchers came up with the following model to determine how SMEs' risk financing and customers' needs are met during temporary shutdown affect SMEs' chance of survival:

$$SME_{Svty} = \beta_0 + \beta_1 SME_{Rfg} + SME_{Cnm} + \varepsilon \quad (1)$$

Where  $SME_{Rfg}$  = represents SMEs' risk financing,

$SME_{Svty}$  = represents SMEs' chance of survival, and

$SME_{Cnm}$  = Customers' needs during temporary shutdown.

The following are the hypotheses for the study in line with the specific objectives of the study.

H<sub>01</sub>: Business risk financing does not significantly relate to SMEs' shutdown in the first 5 years of operation, and survival pattern after the early five years of operation.

H<sub>02</sub>: Risk financing and mitigation approaches do not have any significant effect on SMEs risk exposures.

### C. Models for SMEs survival and failures

Reliability theory was adopted to study survival patterns of the selected SMEs. The theory of reliability has grown primarily out of military applications and experiences with complex military equipment (Gross & Clerk, 1975). Since the reliability of a complex piece of equipment can be modelled by probability statement concerning its lifetime operation, there is a very close connection between reliability theory and survival theory, where it is desired to make probability statements about SMEs' survival going through economic hardship at early stage of inception.

Just like in animal survival studies where the researchers usually start with a fixed number of animals, by subjecting them to a treatment and determine the length of life of the animals from time of treatment, SMEs' survival patterns can also be determined by fixing the duration of business' lifespan to terminate at the time of study. Often because of time and /or cost constraints, the researchers cannot wait until all the SMEs have failed, the models developed by Johnson and Johnson (1980) to study patients survival were used to model the survival of SMEs in the areas of study. Details of these models are given as follows:

Let  $t'_1 < t'_2 < t'_3 < \dots < t'_{N-1} < t'_N$

represent the N (distinct) order times at closure/shutdown of SMEs.

Let  $\Pr(T \leq t) = F(t)$  ..... (2)

be the theoretical (unknown) failure distribution (CDF), and

$\Pr(T > t) = 1 - F(t) = S(t)$  be the corresponding survival distribution function (SDF).

The cumulative distribution model is

$$F_N^0(t) = \begin{cases} 0 & \text{for } t'_1 < t \\ \frac{i}{N} & \text{for } t'_1 < t < t'_{i+1} \\ 1 & \text{for } t > t'_N \end{cases} \dots\dots\dots(3)$$

Where i is the rank of the ith (ordered) observation. That is,  $i \geq 5$  years and represents the minimum numbers of years the SMEs have been in operation. N is the total number of years the SMEs have survived. It must be observed that  $F_N^0(t)$  is a right continuous function of t, and estimates F(t), that is, the probability  $\Pr(T < t)$ .

In order to study the survival pattern, the number of years the SMEs have being in operation are stepped down by 5 years. That is, five years subtracted from

the number of years reported for the SMEs' existence. This enables the failure rate and survival pattern to be determined. The empirical survival function,  $S_N^O(t) = 1 - F_N^O(t)$ , is given as follows:

$$S_N^O(t) = \begin{cases} 1 & \text{for } t < t_1' \\ \frac{N-i}{N} & \text{for } t_1' < t < t_{i+1}' \\ 0 & \text{for } t > t_N' \end{cases} \dots\dots\dots (4)$$

The function  $S_N^O(t)$  is also a right continuous and estimates  $\Pr(T > t)$ .

$t_1', \dots, t_N'$  can be considered as a set of random variables, so  $F_N^O(t) \{F_N^O(t)\}$  is also a random variable.

Empirical SDF is used only when a single shutdown is experienced at any one time. If the unit of measurement used for recording is not small enough (for example, week rather than day), there possibility for multiple shutdown at a given recorded time point. This means that it is possible to know of the exact time of shutdown.

*SMEs' continuity estimation from group Data:* If data is very large, they can be grouped into M fixed boundaries,  $[t_i', t_{i+1}']$ ,  $i = 1, 2, 3, \dots, M-1$ . The length of the boundary is  $h_i = t_{i+1}' - t_i'$ . It is convenient to have boundaries of the same length, but this is not essential.

**Notations.** The following notations for chance of SMEs failing and surviving are used:

$d_i$  is the number of SMEs' shutdown in the boundary of  $[t_i', t_{i+1}']$ .

$N_i$  is the number of SMEs' surviving at the beginning of the boundary  $[t_i', t_{i+1}']$ . In

the present case we have  $N_i = \sum_{j=1}^{N-1} d_j = \sum_{j=1}^{\infty} d_j \dots\dots\dots (5)$

Since  $d_j = 0$  for j greater than M - 1.

In particular,  $N_i = \sum_{j=0}^{M-1} d_j = N \dots\dots\dots (6)$

Equation (6) is the total sample size.

The probability of SMEs' surviving from inception to i is

$$\hat{p}_i = \frac{N_i}{N_0}; \dots\dots\dots (7)$$



This estimates the survival function  $S(t_i)$ , that is,  $\hat{P}_i = S(t_i)$ .

The chance of SMEs' shutdown within the boundary  $[t_i', t_{i+1}']$ , starting from  $t_i$  can also be estimated:

$$\hat{q}_i = \frac{d_i}{N_0}; \dots \dots \dots (8)$$

and also

$$\hat{p}_i = 1 - \hat{q}_i = \frac{N_i - d_i}{N_i} = \frac{N_{i+1}}{N_i} \dots \dots \dots (9)$$

Furthermore, we notice that

$$\hat{S}(t_i) = \hat{p}_i = \hat{p}_0 \hat{p}_1 \hat{p}_2 \dots \dots \hat{p}_i = \frac{N_i}{N_0} \dots \dots \dots (10)$$

which is, of course the same as (Equation 7). The summary of the above results are presented in Table 2.1.

Table 2.1: Estimation of chance of SMEs' continuity from grouped data

i	$t_{i+1} - t_i$	$h_i$	$d_i$	$h_N$	$\hat{q}_i$	$\hat{p}_i$
0	$t_1 - t_0$	$h_0$	$d_0$	$N_0 = N$	$\hat{q}_0$	$\hat{p}_0$
1	$t_2 - t_1$	$h_1$	$d_1$	$N_1$	$\hat{q}_1$	$\hat{p}_1$
2	$t_3 - t_2$	$h_2$	$d_2$	$N_2$	$\hat{q}_2$	$\hat{p}_2$
.	.					
.						
.						
M-1	$t_M - t_{M-1}$	$h_{M-1}$	$d_{M-1}$			
M	—	—	0	0	—	0

Source: Authors' Framework (modified version of Johnson & Johnson, 1980).

## IV. Results

The section deals with how risk financing strategies employed by SMEs affects their continuity in the last five years operations.

**Table 1**  
Business shutdown in the first 5 years of operation **and** business risk financing

Business shutdown in the first 5 years of operation		Business risk financing (or risk mitigation)				Total
		Handle as running expenses	Loan	Special fund is set aside to pay for the loss	Captive insurance	
Yes	Count	28	23	29	2	82
	% within Business risk financing	41.20%	40.40%	44.60%	10.50%	39.20%
	No	33	23	33	13	102
	Count	48.50%	40.40%	50.80%	68.40%	48.80%
	% within Business risk financing					
	Can't really tell	7	11	3	4	25
Total	Count	68	57	65	19	209
	% within Business risk financing	100.00%	100.00%	100.00%	100.00%	100.00%

$\Phi = 0.558, p < 0.05; \text{Cramer's } V = 0.582$

Source: Authors' Computation, 2016.

Table 1 shows that about 39.2% of SMEs in the study areas were at one time temporarily shutdown, while 48.8% reported that they have been running smoothly since their incorporation. However, 12% reported they have partially shutdown but not up to two month on the average. The table shows the relationship between SMEs' risk exposures and mitigation employed and the extent of risk financing is significantly strong ( $\text{Cramer's } V = 0.582, p < 0.05$ ). This risk financing approach is also common with those who reported they had no interruption the incorporation their businesses.

Table 2  
SMEs risk financing and business continuity

SMEs' survival years of operation			Business risk financing				Total
			Handle as running expenses	Loan	Special fund is set aside to pay for the loss	Captive insurance	
5-10	Count	Business risk financing	34	27	32	6	99
	% within	Business risk financing	51.50%	50.00%	50.00%	31.60%	48.80%
11-16	Count	Business risk financing	13	11	24	3	51
	% within	Business risk financing	19.70%	20.40%	37.50%	15.80%	25.10%
17-22	Count	Business risk financing	10	7	7	6	30
	% within	Business risk financing	15.20%	13.00%	10.90%	31.60%	14.80%
23-28	Count	Business risk financing	3	3	1	3	10
	% within	Business risk financing	4.50%	5.60%	1.60%	15.80%	4.90%
29-34	Count	Business risk financing	3	5	0	1	9
	% within	Business risk financing	4.50%	9.30%	0.00%	5.30%	4.40%
35-40	Count	Business risk financing	2	1	0	0	3
	% within	Business risk financing	3.00%	1.90%	0.00%	0.00%	1.50%
41-46	Count	Business risk financing	1	0	0	0	1
	% within	Business risk financing	1.50%	0.00%	0.00%	0.00%	0.50%
Total	Count	Business risk financing	66	54	64	19	203
	% within	Business risk financing	100.00%	100.00%	100.00%	100.00%	100.00 %

Source: Field Survey, 2016 *Cramer's V* = 0.213 > 0.05

Table 2 shows that about 73.9% of the SMEs considered have only survived between 5 to 16 years: 5-10, 48.8%, 11-16, 25.1% while only 40 SMEs representing 19.7% of the SMEs under consideration have survived between 17 and 38 years: 17-22, 14.8%; 32-38, 4.9%. The SMEs' risk financing and survival patterns are also presented in Table 2. The table reveals that 32.9% (68/207) exposures are financed by treating them as part of running expenses while 30.9% (64/207) reported that special funds are set aside to pay for the loss occasioned from business risk exposures. Also, 27.5% reported that they rely on loan from backs to put the business in right footing whenever there is a business difficulty that may lead to its inability to operate. Only 8.7% of the respondents of SMEs' reported to have used

captive insurance to mitigate their exposures to risk. The extent of how risk exposures are financed is moderate but not significant (Cramer's  $V = 0.223$ ,  $p > 0.05$ ). This means that there is no significant relationship between SMEs' risk exposures and risk financing. SMEs' risk financing approach and relationship with to business interruption.

**Table 3a**  
**Variables Entered/Removed<sup>b</sup>**

Model	Variables Entered	Variables Removed	Method
1	Business risk financing		. Enter
2	How customer's needs are met during temporary shutdown		. Enter

a. All requested variables entered.

b. Dependent Variable: Company's existence

Table 3a shows the dependent and independent variables used for regression in Table 3b below. It shows the Beta coefficient direction on how the independent variables affect the dependent variable. The result reveals that as efficient risk financing increases, the SMEs' chance of survival also increased ( $SME_{Rfg} \beta = 0.028, t = 4, p > 0.05$ ) while the strategy employed to meet customers' need after shutdown has inverse effect on SMEs' survivability ( $SME_{Cnm} : \beta = -0.046, t = -7, p > 0.05$ ) but not significant.

The strategies employed by SMEs' owners to meet the customers' needs after company's shutdown have negative impact on their business survival.

$$SME_{Svty} = 13.54 + 0.227SME_{Rfg} - 0.408SME_{Cnm}$$

Table 3c shows the residuals statistics used to plot the histogram and frequency policy in Figure 3a. The figure shows a negatively skewed to the left and this indicates that the SMEs chance of survival after the first five years is high and steadily decreases as the years of establishment increase if adequate risk mitigating techniques are not put in place.

Table 4  
Empirical Survival Results of SMEs

I	$t'_1$	N – i	$S_N^O(t)$	I	$t'_1$	N – i	$S_N^O(t)$
5	27	35	0.875	23	1	17	0.425
6	8	34	0.850	24	3	16	0.400
7	18	33	0.825	25	6	15	0.375
8	15	32	0.800	26		14	0.350
9	2	31	0.775	27		13	0.325
10	29	30	0.750	27		12	0.300
11	4	29	0.725	29		11	0.275
12	12	28	0.700	30	5	10	0.250
13	12	27	0.675	31		9	0.225
14	8	26	0.650	32	1	8	0.200
15	13	25	0.625	33	3	7	0.175
16	2	24	0.600	34		6	0.150
17	1	23	0.575	35	2	5	0.125
18	4	22	0.550	36		4	0.100
19	2	21	0.525	37			0.075
20	14	20	0.500	38			0.050
21	5	19	0.475	39			0.025
22	4	18	0.450	40	2		0.000

Source: Authors' Computation, 2016.

Table 4 shows the ungrouped empirical survival patterns of SMEs. In the first four years, SMEs whose periods of incorporation fall to these years were excluded from the study in order to determine the chance of survival or failure after this period. Thus as can be seen in the table, the chance of 8 SMEs surviving beyond 5 years is 0.875, just as the chance of the 18 SMEs surviving beyond year 7 is 0.825. As the number of years increase, the chance of any number of SMEs surviving the given years decreases until zero is reached which agrees with theory. This pattern is also reflected in histogram and polygon of figures 1 and 2 respectively in appendix. However, the above data were represented in group data format to show how a group of SMEs' chance of surviving at any given year.

Table 5  
Estimation of SMEs' Survival patterns from Group Data with a fixed boundary of 6

i	(t <sub>i</sub> , t <sub>i+1</sub> )	Adjusted boundary year	d <sub>i</sub>	N <sub>i</sub>	q <sub>i</sub>	p <sub>i</sub>
0	5-10	4.5-10.5	99	203	0.4878	0.5122
1	11-16	10.5-16.5	51	104	0.4904	0.5096
2	17-22	16.5-22.5	30	53	0.566	0.434
3	23-28	22.5-28.5	10	23	0.4348	0.5652
4	29-34	29.5-34.5	9	13	0.6923	0.3077
5	35-40	34.5-40.5	4	4	1	0
			203			

Source: Authors' Computation, 2016.

From Table 5, the chances of 99 SMEs and 51 SMEs surviving years 5-10 and 11-16 are closed to 50-50, that is, 0.5122 and 0.5096 respectively. The respective failure rates at the given years are 0.4878 and 0.4904 if appropriate risk mitigation approaches are not put in place by the operators.

## V. Conclusion and Recommendations

This study examined the risk appetites of SMEs and their survival pattern by examining how organisation mitigate their losses and determine whether SMEs' owners put in place the availability of crisis management team to mitigate the operating risk and prevent it from further spreading in order to prevent business shutdown or discontinuity. The study revealed that all of these are lacking, and this type of risk appetite could seriously affect the effectiveness and profitability of the SMEs' operators in question if nothing is done.

Temporary business shutdown does not imply business discontinuity if there is sound risk management approach to mitigate it from further spread. Table 3a-c revealed how risk mitigation and strategies employed to meet customers' needs after the temporary shutdown. The negative effect of strategies employed implies adverse effect on business continuity while the positive sign of risk mitigation suggests that a chance of SMEs surviving.

However, the results are not significant which lead to acceptance of null hypothesis that business risk mitigation and strategies employed to meet customers' needs after the shutdown have no significant effect on SMEs' continuity. The adverse effect of strategies employed to meet customers' needs suggests that such approaches have no business interruption insurance to mitigate the loss of profit

even though there is insurance to protect the business' assets. Other findings in this study revealed that there is a strong relationship between risk appetites and mitigation employed. This risk financing approach is also common with those who reported they had no business interruption incorporation into their businesses.

It is in light of this that the study recommended that SMEs need to take proactive measures rather than reactive approach to protect them against the impending damage. Also, it is recommended that the SMEs should finance their exposures appropriately as follow: where the frequency of losses is high but with low severity, such risk should be handled as expenses while those with low frequency but high severity that can affect the continuity of business should be transfer to insurance companies for appropriate mitigation. Any activity that is of high frequency and severity should be avoided by the SMEs as this bring the question of why should the owners/operators of such businesses want to continue with them.

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## APPENDIX

Figure 1

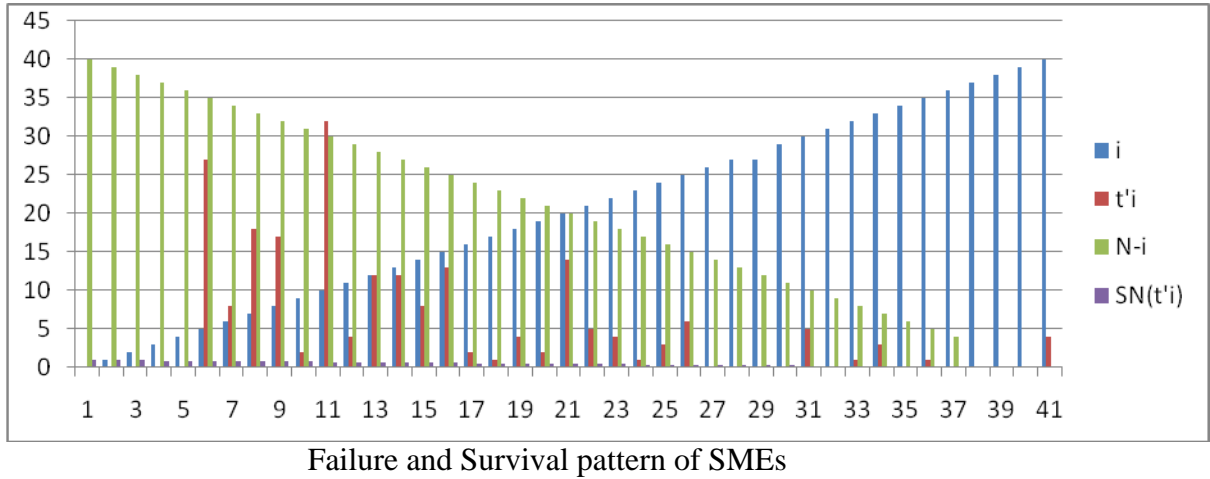


Figure 2

Failure and Survival pattern of SMEs

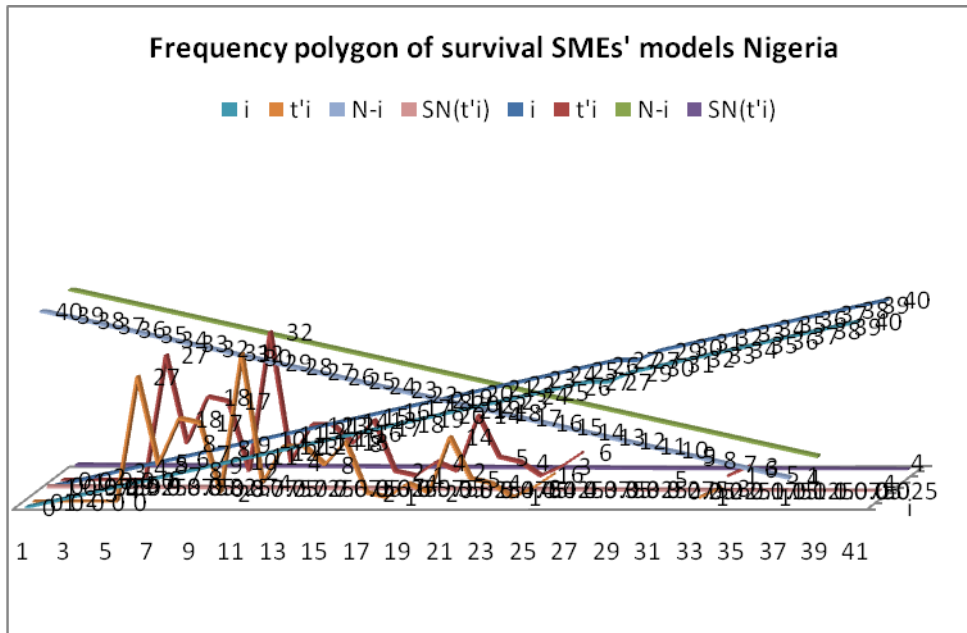


Figure 3a

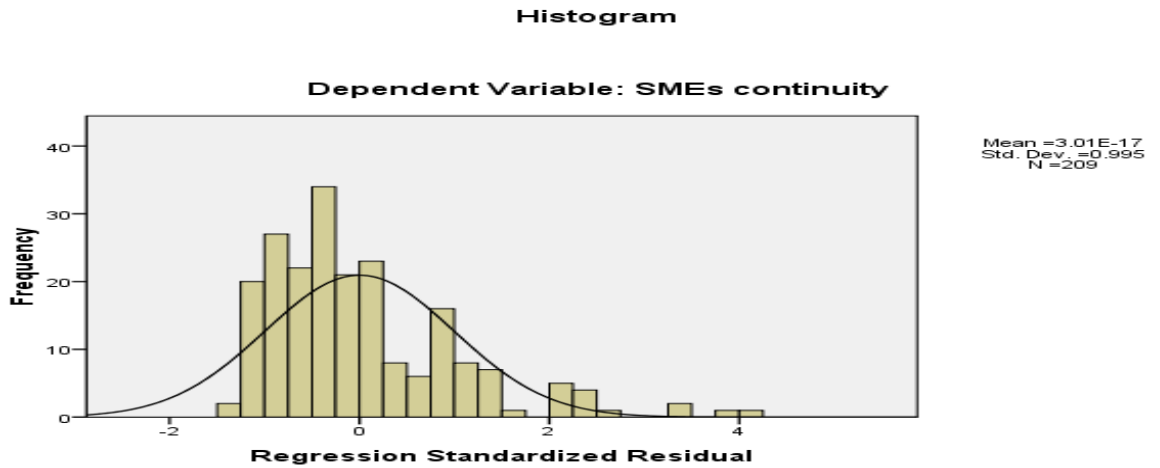


Table 3c  
Residuals Statistics<sup>a</sup>

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	12.1334	14.0384	13.3278	.43769	209
Residual	-1.14034E1	32.96157	.00000	8.13762	209
Std. Predicted Value	-2.729	1.624	.000	1.000	209
Std. Residual	-1.395	4.031	.000	.995	209

a. Dependent Variable: SMEs' Continuity

Figure 4a: Grouped rader mapping of SMEs' survival patterns in years

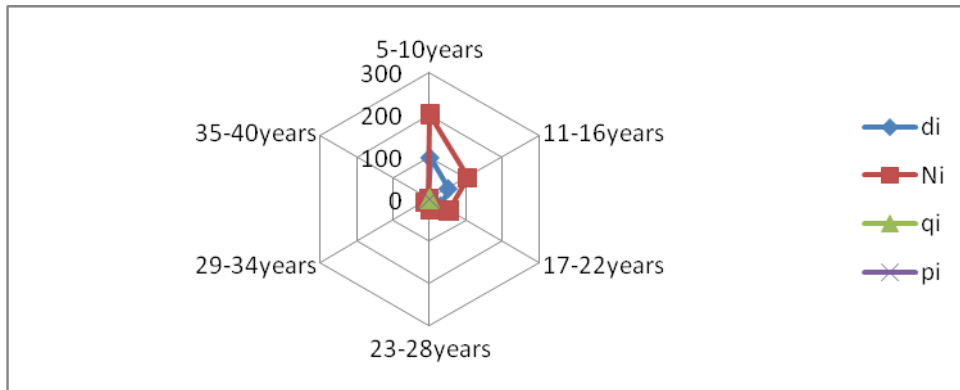


Figure 4b  
Graphical representation of SMEs' survival and failure patterns in years

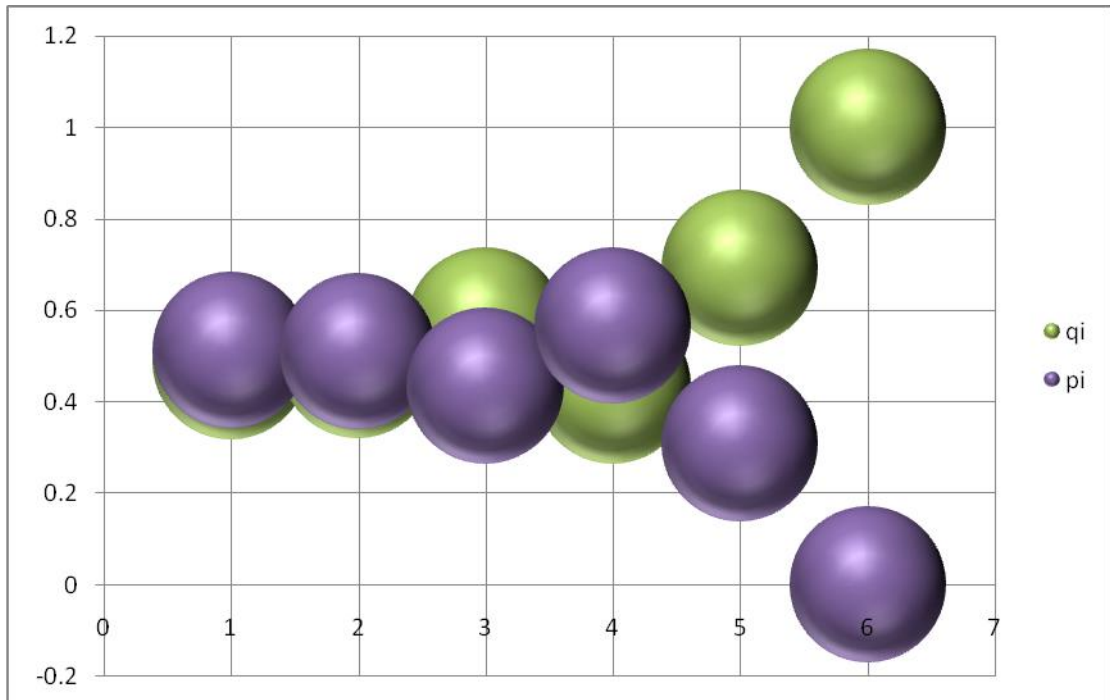


Figure 4c  
Grouped histogram of SMEs' survival patterns in years

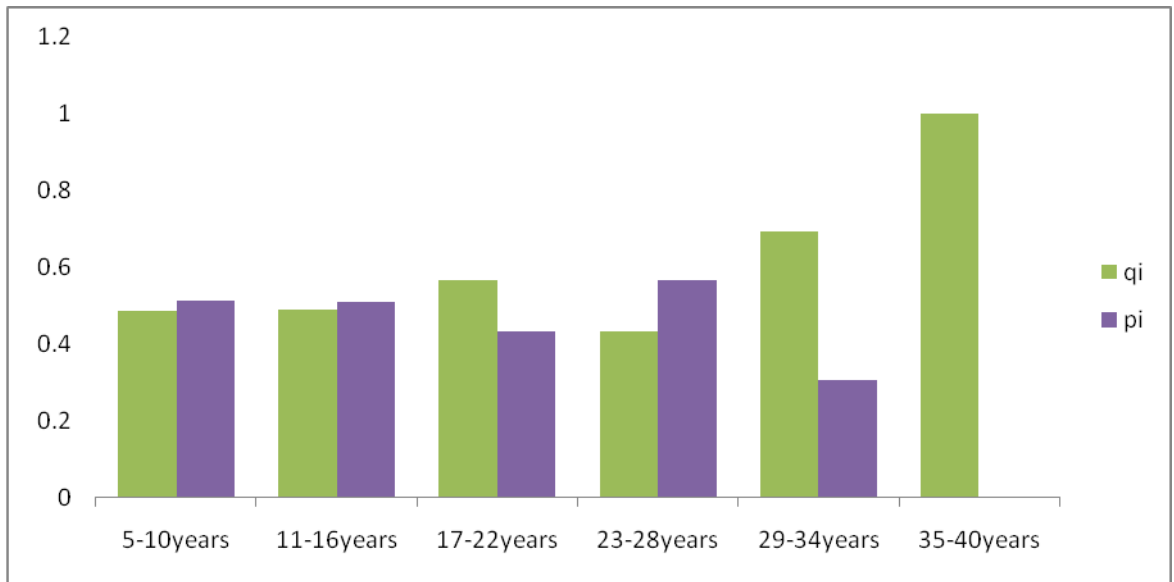


Figure 4d  
Grouped frequency polygon of SMEs' survival patterns in years

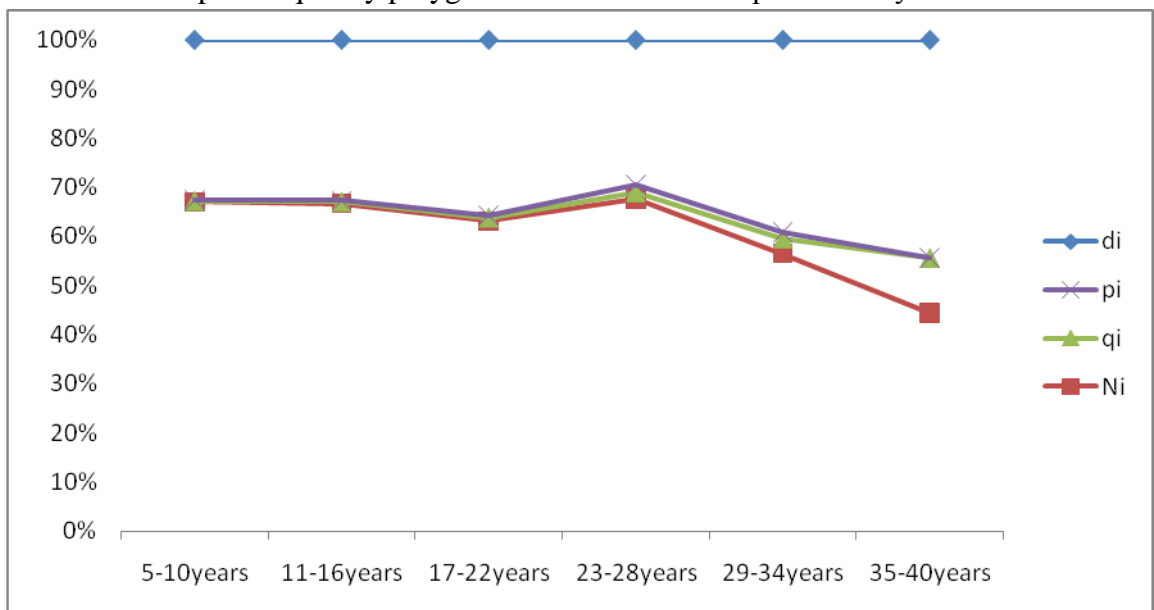


Table 3b  
Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Boundary for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1 (Constant)									
Business risk financing	12.83	1.364		9.4	0	10.136	16		
	0.232	0.573	0.028	0.4	0.69	-0.898	1	1	1
2 (Constant)									
Business risk financing	13.54	1.743		7.77	0	10.102	17		
How customer's needs are met during temporary shutdown	0.227	0.574	0.028	0.4	0.69	-0.904	1	1	1
	-0.408	0.62	-0.046	-0.7	0.51	-1.631	1	1	1

a. Dependent Variable: SMEs' continuity